D

Math Test Five

Difficulty: 10

Name: _____

100 Questions From Lots of Topics

Session 1

Today, you will take Session 1 of Dust1218's Math Test Five. You will not be allowed to use a calculator.

Read each question. Then, follow the directions to answer each question. Mark your answers by writing or typing them in the blanks. If you need to change an answer, be sure to erase it completely first, then put your new answer in the question. Do not try to cheat to get the answers. If you get caught, then your test will be invalidated.

Please answer all the questions in the end, even if you do not know the answer to some questions initially. You may review your answers for this session ONLY. Do not go past the big red stop sign.

Directions to Answering Each Question

1. Work the problem to find the answer.
2. Simplify any fractions when possible.
3. If you are typing your answers on this test with a Chromebook, please use the Roboto font size 40.
4. Fill in every blank in the question indicated by the black lines.
5. If you are greeted with a multiple-choice box, choose the best answer in that box.
6. Write the numbers greater than 999 with commas for the thousands, the millions, etc. to receive credit.

GO ON TO THE NEXT PAGE

1 What is 15.52 + 30.69? _____

2 A piece of land used to be 1.008 acres. However, the piece of land then got 1.2 times smaller.
What is the new area for the piece of land? _____ acres

3 6.191 - 5.889
What's the answer to that math problem? _____

4 38 people watch one movie. The movie is exactly 92 minutes long. If all 38 people watch the entire movie, how many minutes are spent watching the movie for all of the people combined? _____ minutes

5 8.134 minus 6.181 equals what? _____

6 A weighing machine measures things to the nearest 0.005 pounds. A health nut measures the weight of a handful of strawberries on the machine. The machine says that they weigh 0.145 pounds.
x is the machine-rounded weight in pounds for the group of strawberries.
What is the range of possible weights for the handful of strawberries in pounds?
_____ [< or ≤] x [< or ≤] _____

7 What is the difference between -26.4 and -33? _____

8 Calculate (-7) + 19 + (-1) + (-4) + 22. What is the answer? _____

9 The difference between -54 and 99 is what? _____

10 Solve the following problem:
112.32 ÷ -9.6
What is the correct answer to the math problem? _____

11 18 - 13 - 15 - 15 - 9
You will need to do a series of subtractions to solve this math problem.
What is the answer to the above math problem? _____

12 What's -4.3 × -6.3? _____

13 The temperature decreased by 11°C from -7.7°C.
What is the new temperature? _____°C

14 What is the following calculation rewritten as a sum?
12 - 20 - 15 - (-13) - 8
_____

15 What is the answer to 14 - (-16) - 22 - 16 - (-11)? _____

16 One company's profit was exactly 672.568 million dollars in its third to last year. In its second to last year, the company had a profit of exactly double the amount.
What was the company's profit in its second to last year?
_____ million dollars

17 What are all the factors of 3,130?
_____
_____
_____

18 A streaming service had a revenue of 8.28 million dollars more this quarter than the last.
What is 8.28 as a fraction?

_____

19 9 53/100 as a percentage is what? _____

20 Who was once a bad coder was able to make her code 683% more efficient.
What's 683% as a fraction?

_____

21 What is 0.81615151... as a fraction? Simplify where possible.

_____

22 Given that 11/125 = 0.088, what is 261/125 as a decimal? _____

23 What number do you get when you do 5 10/11 - 2 5/13 - 1 12/19?

_____

24 378 people in a fitness center together gained a total of 43 pounds in a year. The number of people per pound gained in the year is: 378/43
What is 378/43 as a mixed number?

_____

25 As an improper fraction, what is 22 2/19?

_____

26 You're halfway done with Session 1!
Now, what is 1 7/14 ÷ 1 3/11 ÷ 2 2/6?

_____

27 Calculate 2 5/10 - 1 7/16 - 3 8/10. What's the answer?

_____

28 In the first week, 100 copies of one book were sold. That book had 2 4/5 times the number of copies sold in the second week.
How many copies of the book were sold in the first two weeks?
_____

29 What is the list of all integers between -91/16 and -19/6?
_____

30 3 9/12 times 3 8/11 times 2 10/12 equals what?

_____

31 What is 1 7/15 of 105? _____

32 1/50 of an amount is 8. What is 3/2 of the amount? _____

33 A device with a super-long battery life has its battery drain 30% for every 420 minutes that pass.
p = percent drained, t = time passed in minutes
Which values for p and t complete the fully simplified fraction for the battery drainage rate?
Battery drainage rate = p/t
p = _____ and t = _____

34 Which number makes the statement true?
Half of 8.3912 is equal to _____

35 When simplified, what does the following expression look like?
$27^{-7} \div 9^{-2}$
_____

36 What is $16^{-1} \div 256^{-7}$ when simplified? _____

37 Simplify this expression:
$4^{-4} \times 64^{3}$
What's your answer? _____

38 As a single power of 4, what is $(64^{-2})^{2}$?
_____

39 You're over 75% done with your session, right?
Anyway, what is the 23rd multiple of 72? _____

40 Here's another addition problem for you.
3,424 + 10,005 is what number? _____

41 A person is playing a game with a point system starting from zero points. The change in points during the week is as follows:
Monday: +8 points
Tuesday: -17 points
Wednesday: +15 points
Thursday: -4 points
Friday: +1 point
Saturday: -24 points
Sunday: +8 points
How many points does he have in the game by the end of Sunday?
_____ points

42 What is 3 × 18 ÷ 9 × 6 ÷ 3 × 36 ÷ 12?

_____

43 150% of an amount is 900. 2% of the amount is what number? _____

44 The amount of money in a country is exactly 2.1114 billion dollars.
The population of the country is 10,000 people.
How much, on average, does a person have in the country?
_____ billion dollars

45 What are the following numbers written in descending order?
-20, -27, -0.09, -0.08
_____

46 Here's something for you: 2.7³ is equal to 19.683.
Given that, what is 270³? _____

47 For question number 47, what is 64 to the 6/3? _____

48 This question is related to square roots.
When simplified, what is √567 + √252? _____
NOTE: If you are on the computer, it is highly recommended you use
your "Draw" tool on the blank line for this question.

49 There are three consecutive integers that have a product of -4,080.
What are they?
_____, _____, and _____

50 Last question for this session!
A number freak wants to know the prime factorization of 5,000.
5,000 as the product of its prime factors is what?
_____

STOP

You have reached the end of Session 1 of the test.

• Review your answers from Session 1 only.
• If you are taking this test on a computer, save the PDF math test file under a DIFFERENT name: MathTestFivePersonAnswers.pdf.
• Make sure you have a reminder that Session 2 is coming tomorrow.
• Then, put away your math test and come back tomorrow for Session 2.

Session 2

Today, you will take Session 2 of Dust1218's Math Test Five. You will not be allowed to use a calculator. If you are taking this test on a computer, make sure that you take the session under the file name MathTestFivePersonAnswers.pdf.

Read each question. Then, follow the directions to answer each question. Mark your answers by writing or typing them in the blanks. If you need to change an answer, be sure to erase it completely first, then put your new answer in the question. Do not try to cheat to get the answers. If you get caught, then your test will be invalidated.

Please answer all the questions in the end, even if you do not know the answer to some questions initially. You may review your answers for this session ONLY. Do not go past the big red stop sign.

Directions to Answering Each Question

1. Work the problem to find the answer.
2. Simplify any fractions when possible.
3. If you are typing your answers on this test with a Chromebook, please use the Roboto font size 40.
4. Fill in every blank in the question indicated by the black lines.
5. If you are greeted with a multiple-choice box, choose the best answer in that box.
6. Write the numbers greater than 999 with commas for the thousands, the millions, etc. to receive credit.

GO ON TO THE NEXT PAGE

51 Halfway there with the math test!
But anyway, what is the highest common factor of 154, 330, and 352? _____

52 How many factors does 20,790 have? _____

53 A healthy eater can get peas in batches of 156, batches of 42, or batches of 84. She needs to get at least one batch.
Furthermore, she can only choose one of the three kinds of batches, and she wants to ensure that she can get the same number of peas in total no matter which kind of batch of peas she chooses.
What is the fewest number of peas to make it happen? _____ peas

54 Which number fills in the question mark for this equation?
$170 \times ? = 200 \times 255$

_____

55 What is $\sqrt{45} \times \sqrt{72}$? Simplify your answer where possible.
_____

NOTE: If you are on the computer, it is highly recommended you use your "Draw" tool on the blank line for this question.

56 After rationalizing the denominator and simplifying, what is the expression below?

$$\frac{14 + \sqrt{14}}{\sqrt{26}}$$

_____

NOTE: If you are on the computer, it is highly recommended you use your "Draw" tool on the blank line for this question.

57 Is 47/480 a terminating or recurring decimal?
When converted to decimal form, 47/480 is a
[terminating | recurring] decimal.

58 Take the square root of 480.
When simplified, what will it be? _____
NOTE: If you are on the computer, it is highly recommended you use your "Draw" tool on the blank line for this question.

59 What is 0.883622 rounded to 4 significant figures? _____

60 $(1.6 \times 10^{-13}) + (1.4 \times 10^{-7})$ is equal to what?
_____

61 This is a real-world question.
Before the year 1 CE, the population of the world hit 1.7×10^8 people.
What is 1.7×10^8 as an ordinary number? _____

62 In standard form, what is 28×10^{-1}? _____

63 What is $(1.4 \times 10^{-17}) \div (1 \times 10^{-5})$? _____

64 For the 5th question in a row that features scientific notation, what's the answer to $(8 \times 10^{-36}) \times (1 \times 10^{-17})$? _____

65 This is the 6th and last question in a row that uses scientific notation.
Take a look at this math problem:
$(1.9 \times 10^{-8}) - (4 \times 10^{-12})$
What's the answer to the above problem in scientific notation?
_____

66 A circle has a center at (-23, 11) with a radius of 3.
What is the equation of the circle?
_____

67 $y = -6x^3 - x + 4$
What are the values of y for the above equation for the following values of x?
When x = -5, y = _____
When x = -4, y = _____
When x = -3, y = _____
When x = -2, y = _____
When x = -1, y = _____
When x = 0, y = _____

68 If 18x = 289, then what is -18(x - 1)? _____

69 What does x equal to in the equation $-12(-4x - 4) = 480$?
x = _____

70 If 10 : 5 is equal to 10x : 4, then what is x?
x = _____

71 What is the solution to the following system of equations?
$9x - 13.3y = -16.78$
$-15.8x + 9.1y = 6.66$
x = _____
y = _____

72 Let's not be serious for a second, okay?
A teacher gives you an equation, which is $x^2 - 15x + 54 = 0$.
All you have to do for this question is to solve the equation correctly.
If you get it wrong, you won't get points for this question as always!
What is/are the solution(s) to the above equation? Your teacher will appreciate your answer if you get this correct!
x = _____

73 This question is similar to the last one.
What is/are the solution(s) for x for $8x^2 + 4x - 12 = 0$?
x = _____

74 Solve:
$12.1 = -0.9 + w$
What is the solution for w?
w = _____

75 For this question, solve for k.
What does k equal to for $235 = k^2 + 10$?
k = _____

76 Here's another algebra question I guess... Also, 75% done!
$-13(-4x - 10) = -12(-9 - 8x)$
What does x equal to for the above equation?
x = _____

77 For $12 = 12(-13 - 10x)$, what number is x? _____

GO ON

78 Which value of x makes the statement true?
$-10x + 11 = -15x + 5$

_____

79 What do you get when you calculate the following?

$$\frac{4x^2 + 4x - 8}{-x + 1}$$

_____

80 The algebra stuff doesn't seem to have an end, doesn't it?
But right now, you are being asked to solve this math problem:

$$\frac{-24x^2 + 9y^2 - 15xy - 72x - 6y - 48}{8x - 3y + 8}$$

What is the answer to that one? _____

81 When $-3x - 6z + 3z + 6x + 8z$ is simplified, what do you get?

_____

82 $2x^2 + 20x + 30$
What is the above expression in the form $a(x + b)^2 + c$, where a, b, and c are constants? _____

83 $(x + 9)(x - 14)$
You'll need to expand and simplify the expression above. What do you get when you do that? _____

84 What will you get when you expand and simplify $(2x - 10)(x - 13)$?

_____

85 Expand and simplify this:
$5(5x - 5y) - 3(4x - 2y)$
After doing that, what's the expanded and simplified expression?

_____

86 This is like the twentieth algebra question in a row!
Expand $13x(5x^3y^4 + 3x + 2y^3)$. What expression do you get afterward? _____

87 What expression do you have after you fully factorize $45x^5y^5 - 27x^8y^5 - 117x^5y$? _____

88 What expression do you have after you factorize x² - 9x - 36?
_____

89 -9x² + 30x + 11
What expression do you get after you factor the above expression?
_____

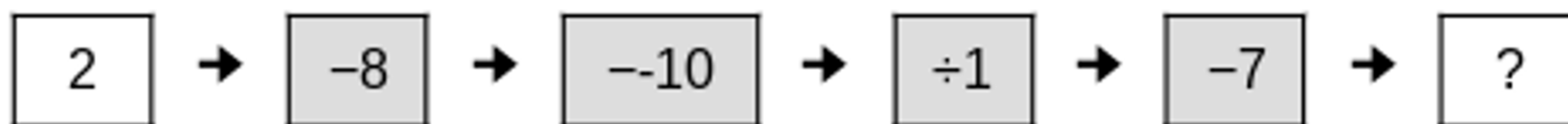**90** What is -3yz × -6y × 5xz after simplifying? _____

91 Unfortunately or fortunately (depending on your opinion on algebra), the algebra question streak may end after this question. At least you have 10 more questions to answer on this test!
If i = -14 and j = -1.4, what is 9(-3i + 10j)? _____

92 Solve this math problem.

| ? | → | ÷-2 | → | −2 | → | ×1 | → | +-3 | → | -13.5 |

What's your answer? _____

93 What's the solution to this math problem?

| 2 | → | −8 | → | −−10 | → | ÷1 | → | −7 | → | ? |

_____

94 A straight line passes through the points (-16, -19) and (-6, -1.5).
What is the gradient of the line?

_____

95 A line segment passes from (-14.5, 38) to (14.5, -25).
What are the coordinates of the midpoint of the line segment?
_____

96 The solution to g + − 2 ≥ -2.6 is what? g [<, >, =, ≤, or ≥] _____

97 Solve 14 + 2x ≤ -2.
What's the solution to this inequality? x [<, >, =, ≤, or ≥] _____

98 Three more questions to go!
Take 6x - 10 < 12x - 8.2 and solve it. What result do you get?
x [<, >, =, ≤, or ≥] _____

99 The second to last question for this math test is the following.
What are the values of y for y = -2x - 4 for each of the below values of x?
0, 1, 2, 3, 4, and 5
When x = 0, y = _____
When x = 1, y = _____
When x = 2, y = _____
When x = 3, y = _____
When x = 4, y = _____
When x = 5, y = _____

100 This is the last question on the math test! You made it so far!
Anyway, a worker had $1,000 in his bank account, but one day, he deposited an unknown amount of money into his account. He then deposited $752 into the same account the next day. His bank account now has $2,000 in it.
What was the unknown amount of money he deposited?
$_____

STOP

You have reached the end of the test.

- Review your answers from Session 2 only.
- If you took this test on a computer, save the PDF math test file.
- Then, put away and turn in your math test.

Math Test Five

Difficulty: 10

100 Questions From Lots of Topics

D

Dust1218